Intel Corporation Annual Report 1986

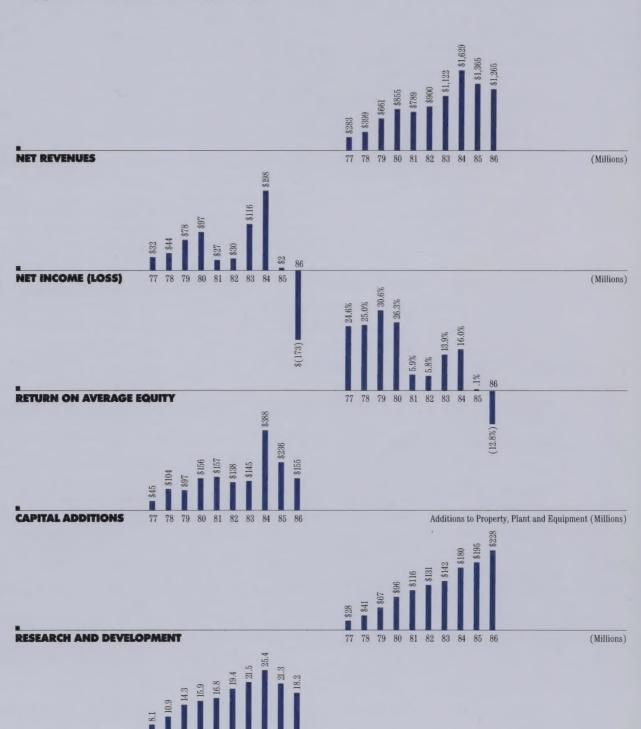
TEN KEY TRENDS FOR INTEL'S FUTURE



FINANCIAL HIGH	HLIGHTS	1	
MANAGEMENT R	REPORT		
INTEL IN BRIEF			
TEN KEY TREND	S FOR INTEL'S FUTUE	RE	
► The 80386 and 802 microprocessor lea	286 are extending Intel's adership.		
Intel is building cl with its customers			
productivity in the	component manufacturit e past two years, and plan within three years.		
► Intel has entered	the growing ASIC marke		1
	ened its leadership in El worldwide competition.	PROMs	
► Intel has develope systems operation			
Intel is developing in microcommunic			
► Intel is focused on international sem	serving the increasingly iconductor market.		
► CHMOS has become process technolog	ne Intel's mainstream y.		
► Intel is finding ne	w ways to innovate.		
FINANCIAL INFO	ORMATION		
CÓRPORATE DIE	RECTORY		

Net Revenues		\$1,265,011	\$1	,364,982	\$1	,629,332
Income (Loss):	Before taxes and extraordinary item Net Net per share	\$ (174,634) \$ (173,165) \$ (1.48)	\$ \$	(5,448) 1,570	\$	298,149 198,189 1.70
Return on revenues:	Before taxes and extraordinary item Net	(13.8%) (13.7%)	Ф	(.4%)	Φ	18.39 12.29
Return on average eq		(13.7%)		.1%		16.09

See page 27 for a description of our industry segment reporting.



Management Report

We're pleased to report 1986 is over. It was, without question, the toughest year in Intel's history, filled with plant closings, layoffs and deep losses.

As difficult as it was, 1986 also contained within it the seeds of our recovery, seeds planted by the hard work and perseverance of Intel's people. We're starting to see the payoff for those efforts.

To understand why 1986 was so difficult for the semiconductor industry, one must go back to 1983-84, a period that can be said to have caused the next two years.

In 1983, demand for semiconductors exploded, fueled in large part by the rapid expansion of the personal computer business. No one could get enough semiconductors, especially Intel microprocessors, which had emerged as the standard for personal computers.

Given this atmosphere of scarcity, it was natural that our customers demanded assurance of adequate future supply when deciding what microprocessor architecture to use as the centerpiece of their systems.

Intel's response was twofold. First, we started a major manufacturing expansion. Capital spending in 1984 was \$388 million, up 168% from 1983. Second, we licensed other semiconductor manufacturers to produce Intel microprocessors, peripherals and microcontrollers. We met our customers' needs and helped expand the total market for our products, but we also lost control over a generation of our products and created our own competition.

The boom collapsed in the fourth quarter of 1984. The computer industry, our major customer, went into a slump just as significant amounts of new semiconductor capacity came on stream throughout the world. The demand projections of 1984 became instant relics in 1985, creating a capacity glut and a severe downward price spiral.

Intel was left with an overhead structure appropriate to the \$2-3 billion company we wanted to be rather than the \$1.0-1.5 billion company we were becoming. As a result, we have spent the past two years resizing Intel, redeploying assets from low to high growth areas and maintaining strategic programs to get the company back into a position to grow and make money again.

In the past two years we have closed eight of our older, smaller components and systems manufacturing plants. We have been forced to reduce the Intel workforce by 7200 people through attrition and layoffs. At the same time, we have invested \$210 million in capital equipment during 1985-86, much of it for manufacturing. The result is a doubling of manufacturing productivity in the past two years due to automation, better methods and reduced staffing levels.

We concentrated on maintaining our momentum in research and development programs. In 1986, we spent \$228 million for R&D, equal to 18% of revenues, and an increase of \$33 million over 1985. We also introduced 74 new products. Spared 1985's steep price erosion, these new products are in a position to deliver higher margins than older products.

We phased out of the dynamic random access memory (DRAM) business in 1985, and decided to sell our bubble memory business in 1986. We had become a minor participant in the crowded, loss-plagued DRAM market; bubble memories had become a niche market that didn't fit our long-term strategy. We moved into more promising areas such as microcommunications, application-specific integrated circuits (ASICs), personal computer add-in boards and parallel computers.

While we decided to get out of two memory components businesses, we remained in a third—erasable, programmable, read-only memories (EPROMs). Intel invented the EPROM and has always been the technology and market leader. We decided to defend our industry-leading market share in the face of aggressive targeting by Japanese competitors. The International Trade Commission recently upheld our complaint that the Japanese "dumped" (sold below cost) EPROMs. The U.S.-Japan Semiconductor Trade Agreement reached in 1986 should end this practice if properly enforced.

According to Dataquest, a market research firm, Intel gained EPROM market share in both 1985 and 1986. This was an expensive but necessary victory. EPROMs are our highest volume chips; we need them for manufacturing process technology development. Also, in anything resembling normal business conditions, we can be profitable in EPROMs.

We concentrated on strengthening relationships with our customers. We significantly improved delivery performance and started programs that enable customers to forego incoming inspection of Intel products, the latter made possible by our high product quality. As a result of these and other programs, customer satisfaction indicators have improved markedly.

We also worked to protect our intellectual property. In a landmark decision in 1986, the court agreed with our position that microcode, a computer program embedded in silicon, is covered by U.S. copyright laws, just like any other computer program. Innovation has always been our strength; protecting those innovations is one of our highest priorities.

As we move into 1987, we are especially pleased by the strength of Intel's component and system-level product line. There is no better example of this strength than the 80386, a new product received by the market with an enthusiasm unprecedented in our experience. The power of this 32-bit microprocessor, its compatibility with the large base of software already written for Intel microprocessors, and its architectural enhancements account for the market's excitement. The first 386-based products were introduced in the third quarter of 1986. Production of this component is increasing rapidly.

Complementary to the 80386 are a math coprocessor and two highly integrated VLSI peripheral chips scheduled for unveiling in the first quarter of 1987. These products should be very attractive to many designers of 386-based systems.

The 80286 became Intel's highest volume microprocessor this year as our OEM (Original Equipment Manufacturer) customers and end users stepped up to the higher performance offered by this advanced 16-bit microprocessor.

Postscript From The Chairman

In April, on my recommendation, the Board of Directors plans to elect Andy Grove chief executive officer. Andy has been at Intel since the beginning, and as president and chief operating officer, he has been one of the principal architects of this company's growth, direction and character.

Andy has also been my friend and colleague for more than 20 years. He is an extraordinarily talented manager who has built a strong, deep management team. As a result, I feel very comfortable about the company's future as I pass the mantle after 12 satisfying years as chief executive officer. I intend to continue as chairman.

M

We are very pleased to report that the military versions of the 286 and 386 were the first off-the-shelf chips admitted to the qualification process of the U.S. Government's VHSIC (Very High Speed Integrated Circuit) program. In the past, admittance was limited to chips developed specifically for VHSIC. Full qualification, which takes about one year, will significantly expand the military market for these chips.

It was an excellent year for 16-bit microcontroller design wins. Our 8096 and 80186 families of controller chips are being used in a steadily increasing number of industrial, automotive and other applications requiring 16-bit processing power.

We expanded our already strong lineup of single board computer modules this year with the addition of new 80386-based boards using Intel's MULTIBUS® architecture. During the past two years, we have also established a good position in the thriving market for personal computer add-in boards that permit users to add memory, functions or processing power to their systems.

Intel is well-positioned to grow at this point. Our product portfolio, manufacturing infrastructure and customer relationships are all better than they were two years ago.

The year came to a close with fourth quarter orders and revenues substantially higher than the first quarter of 1986. If these trends can be maintained, Intel should return to levels of performance that will once again provide satisfaction to our shareholders and employees.

Q.5. Grove

Andrew S. Grove President and Chief Operating Officer Gordon E. Moore Chairman of the Board and Chief Executive Officer



Intel In Brief

Intel designs and manufactures semiconductor components and related single-board computers, microcomputer systems and software for original equipment manufacturers. The corporation's full range of electronic building-block products supports established industry standards. The following brief descriptions of Intel's principal product areas feature details about their functions, 1986 developments and current market data.

MICROPROCESSORS

Function. A microprocessor is the central processing unit in a microcomputer-based system. It manipulates data in a system, controlling input, output, peripheral and memory devices.

Intel Position. Intel introduced the first microprocessor in 1971 and remains the world's largest manufacturer of these devices.

1986 Developments. The 32-bit 80386 microprocessor introduced in October 1985 garnered over 200 design

wins and appeared in products from more than 30 companies in 1986. It is being used in office computers, engineering workstations and artificial intelligence computer systems. Intel's 16-bit 80286 captured more design wins in 1986 than it had in the past three years combined, including new uses in industrial automation, telecommunications and military products. In 1986 the 80286 became Intel's highest-volume microprocessor.

WORLDWIDE UNIT

Market Data. 1986 industry sales, 8-, 16- and 32-bit microprocessors: \$545 million. 1982-1986 compound annual growth rate: 26%¹.

MICROPROCESSOR PERIPHERALS

Function. A microprocessor peripheral is a special-purpose chip that reduces the burden on a central processing unit by managing selected input/output or system functions. Peripheral devices such as graphics coprocessors control the visual screen display of graphic and text information. Other peripheral chips control floppy disk drives, Winchester disk drives, keyboards and printers. Mathematics coprocessors handle very high-speed calculations.

Intel Position. Intel offers more than 60 microprocessor peripheral components for office, engineering, scientific and industrial microcomputer applications.

1986 Developments. The 82786 graphics coprocessor introduced in May 1986 incorporates a display- and graphics processor on one chip, replacing functions of an entire graphics controller board. It provides high-resolution, low-cost graphics capabilities for personal computers, engineering workstations and laser printers. The 82072 floppy disk controller chip announced in September replaces an entire controller card. The new 82064 single-chip Winchester disk controller, also introduced in September is built with proprietary CHMOS technology and uses 80% less power than NMOS controllers.

Market Data. 1986 industry sales, microprocessor peripherals: \$1.6 billion. 1982-1986 compound annual growth rate: $32\%^1$.

MICROCONTROLLERS

Function. Microcontrollers typically incorporate a central processing unit, random access memory, program memory and input/output circuitry on one chip. They are used in computer and communications systems, robotics, electronic instrumentation, telephones, modems, keyboards, printers and home video machines. They are also used in automotive engine controls, anti-lock braking systems and emission control systems.

Intel Position. Intel introduced the first single-chip 8-bit microcontrollers, the 8748 and 8048, in 1976. In 1980 Intel introduced a more powerful family of 8-bit microcontrollers based on the 8051, which has become an industry standard. In 1982 Intel introduced its 16-bit family of microcontrollers, the 8096.

1986 Developments. The 8096 microcontroller family achieved over 300 new design wins, with the majority of these design

WORLDWIDE UNIT SHIPMENTS OF 8-BIT MICROCONTROLLERS (Millions of Units)

wins slated for use in communications, industrial control, computer peripheral applications and automotive control systems.

Market Data. 1986 industry sales, microcontrollers: \$1.3 billion. 1982-1986 compound annual growth rate: 32%.

Based on Dataquest estimates

MICROCOMPUTER MODULES AND SYSTEMS

Function. Intel microcomputer systems and single-board computers are based on Intel microprocessors and coprocessors, and serve as building blocks in scientific, technical and commercial applications.

Intel Position. Intel is the leading supplier of single-board computer modules. The corporation continues to expand its existing base of systems products for original equipment manufacturers and end-use retail customers.

1986 Developments. *OEM Modules*: More than 25 single-board computer products were introduced, including several based on the 32-bit 80386 microprocessor. A new single-chip message-passing coprocessor makes full use of the advanced MULTIBUS® II bus architecture for the first time.

OEM Systems: The FASTPATH™ connectivity platform was introduced. It connects IBM mainframes and compatibles to either DEC VAX² minicomputers or microcomputer systems based on Intel's MULTIBUS architecture.

Scientific Computers: The iPSC™-VX Vector Extension Concurrent Supercomputer, which delivers supercomputer performance for certain types of large-scale, scientific computations, was introduced. Intel received a contract from Carnegie-Mellon University to develop elements of an advanced parallel processing system.

Personal Computer Enhancement Products: Key new add-in boards were directed at owners of IBM PC AT and compatible machines: Inboard $^{™}$ 386/AT boosts system performance with its 80386 microprocessor, while Above $^{™}$ Board PS/AT provides additional functions and memory.

Market Data. 1986 industry sales, single-board computers: \$1.2 billion. 1982-1986 compound annual growth rate: 26%.

1986 industry sales, U.S. original equipment manufacturer (OEM) microcomputer systems: \$3.4 billion. 1982-1986 compound annual growth rate: 38%.

MICROCOMMUNICATIONS PRODUCTS

Function. Microcommunications products allow general voice or data communications among engineering workstations, personal computers, mainframe computers and automated manufacturing equipment.

Intel Position. Intel manufactures microcommunications components, boards, microcomputer systems and software. Foremost among its microcommunications products are Intel's OpenNET™ local area network (LAN) strategy and its FASTPATH™ LAN-to-mainframe high-performance connectivity platform. Intel is a major supplier of LAN controllers, in addition to offering several receiver/transmitter components and communications coprocessors.

1986 Developments. American Telephone and Telegraph (AT&T) and Intel reached an agreement in 1986 to ensure that their respective semiconductor devices for ISDN (Integrated Services Digital Network) use will be compatible.

The 29C53 transceiver chip and the 29C48 converter component were introduced as ISDN devices. Together they allow simultaneous data and voice transmission between personal computers and facsimile machines over standard telephone lines. The 8250 universal asynchronous receiver/transmitter controller chip that replaces up to eight components was also introduced to facilitate data communications capabilities with personal computers. Intel's new UPI™-452 universal peripheral interface integrates 10 to 15 components on one device.

The Intel MAP Communications Controller (iMCC), which began shipping in September, allows manufacturing automation protocol (MAP) systems to be defined in any form factor or system bus architecture. The iMCC includes a modem board, token bus controller, EPROM and Intel's 80186 microcontroller.

Intel's iNA 960, a complete transport and network software system, was independently certified as meeting the standard physical, data link, transport and network layers of the International Standards Organization MAP interconnection standard. The certification, which is held by only a few other products, is a key step toward receiving broad user acceptance.

Market Data. Not available.

DEVELOPMENT TOOLS

Function. Development tools are used by engineers to develop and debug hardware and software for microcomputer-based systems.

Intel Position. Intel development tools include hardware and software for Intel microprocessors and microcontrollers. These tools run on industry-standard host computer systems such as DEC VAX²/VMS², DOS-compatible personal computers, Intel 286/310 microcomputer systems and Intellec® development systems.

1986 Developments. Development tools for the 80386 32-bit microprocessor were introduced, accelerating the proliferation of this device into the marketplace. A new iPAT (Intel Performance Analysis Tool) was also introduced, providing real-time performance analysis for Intel microprocessor-based software. The iPAT tool runs on the IBM PC AT, PC XT and Intel development systems.

Market Data. 1986 industry sales, microcomputer development systems and development tools: \$610 million. 1982-1986 compound annual growth rate: 9%³.

² MicroVAX II, VAX and VMS are trademarks of Digital Equipment Corporation

³ Based on Prime Data estimates

⁷ Based on Gnostic Concepts estimates

SOFTWARE

Function. Software is a set of programming instructions that directs a microcomputer-based system to perform specific tasks.

Intel Position. Intel provides software for microcomputer operating systems and high-level networking. It also offers development and debug support software for OEMs incorporating Intel microprocessors or microprocessorbased systems into their end-user products.

1986 Developments. Intel's iRMX®-86 real-time operating system was enhanced in 1986 with the introduction of Release 7.0. The new Intel XENIX⁴ operating system runs on an Intel 80286 microprocessor as a fully licensed version of Bell Laboratories' UNIX⁵ System III operating system. The XENIX operating system is used for software development in applications requiring multiple users or multiple tasks.

Intel's new VAX²/VMS² OpenNET™ networking link allows development support for Intel's 32-bit 80386 microprocessor and the 16-bit 80286 microprocessor to be performed on VAX/VMS and MicroVAX II² systems. The networking link is also available to tie DEC-based computer systems and operating systems into Intel-supported development systems.

Market Data. 1986 industry sales, microcomputer software: \$2.1 billion. 1982-1986 compound annual growth rate: 31%.

► MEMORIES

Function. Memory components store computer programs and data entered during system operation. Intel's erasable, programmable, read-only memories (EPROMs) are primarily used to store programs and other permanent information in computers and microcontrollers across a range of products, including everything from personal computers to automotive engine controls.

Intel Position. Intel is the largest supplier of EPROMs. The corporation also manufactures electrically erasable, programmable, read-only memories (E²PROMs) and static random access memories (SRAMs).

1986 Developments. In 1986 Intel began shipping one-megabit EPROMs in volume. With three distinct architectures at the one-megabit level, Intel is able to meet customers' varying system application and upgrade requirements. In addition to traditional packaging, the company continued to support its customers' advanced packaging needs by supplying EPROMs in both surface-mount and plastic, one-time-programmable (OTP $^{\text{TM}}$) packages.

In the E²PROM market, Intel introduced a 64-kilobit device. The corporation continues E²PROM technology development to expand the product line with higher densities and alternative packaging. Intel also made a decision to sell its bubble memory business to focus on memory technologies offering solutions for a broader range of applications.

Market Data. 1986 industry sales, MOS semiconductor memories: \$4.5 billion. 1982-1986 compound annual growth rate: 12%¹.

ASIC PRODUCTS

Function. An application-specific integrated circuit (ASIC) is a chip designed by a customer for one application, as opposed to a standard chip which is designed by a semiconductor manufacturer to meet the needs of many customers. The customer selects functions to be included in the chip supplied by the ASIC vendor, and uses computer-aided tools to develop and implement the design.

Intel Position. Intel is a new entrant into the ASIC market. Its strengths are: 1) industry-standard microprocessors, microcontrollers and peripheral chips that can serve as the cores of ASIC chips 2) well-established relationships with customers 3) a large, technically proficient field force 4) proven design tools, and 5) advanced chip manufacturing capabilities.

Initial products consist of a line of erasable, programmable logic devices (EPLDs), a family of gate arrays and a standard cell library of more than 100 cells. Intel's EPLD products feature 200 to 1,800 gates, while its gate array and cell-based products contain between 2,000 and 20,000 gates.

1986 Developments. Intel opened customer ASIC design centers in Santa Clara, California; Boston, Massachusetts; and in the first quarter of 1987, Swindon, England. A dedicated prototype chip fabrication-assembly-test facility was constructed in Santa Clara.

Market Data. 1986 industry sales, ASIC components: \$4.9 billion. 1982-1986 compound annual growth rate: 32%.

 $^{^1}$ Based on Dataquest estimates

² MicroVAX II, VAX and VMS are trademarks of Digital Equipment Corporation

⁴XENIX is a trademark of Microsoft Corporation

⁵ UNIX is a trademark of Bell Laboratories

⁶ Based on infoCorp estimates

The semiconductor industry has passed through a deep slump in the last two years, caused by worldwide overcapacity in semiconductors and slower demand for computers.

During this vexing time,
Intel has not been simply biding
its time, waiting for better days.
Instead, the company has been
busy reshaping itself, preparing to
compete in the entirely new marketplace that is slowly emerging
from today's disorder.

The many steps Intel is taking aren't restricted to the cutbacks necessitated by hard times. Intel, of course, has been forced to pare its operations, but the agenda goes well beyond that. It takes in such tasks as improving manufacturing efficiency, working more closely with customers, and solidifying leadership in existing markets while also exploring new ones.

In this year's annual report, we look at ten ways Intel has prepared itself to face the future; ten reasons why Intel is wellpoised to deal with the marketplace's new opportunities.

TEN KEY TRENDS FOR INTEL'S FUTURE



THE 80386 AND 80286 ARE EXTENDING INTEL'S MICROPROCESSOR LEADERSHIP.

A survey of the popular and business press in 1986 would turn up scores of articles about Intel's new 80386 microprocessor—but few of these were dry technical writeups. Instead, phrases like "a watershed high-tech product" and "the wonder chip" were common; in general, their excitement was of the sort usually associated with reviews of a smash Broadway play.

This enthusiasm abounded because during the year, the world discovered what Intel has known throughout the development of the 386—that it is not just another new integrated circuit. Instead, by packing the power of a minicomputer onto a piece of silicon the size of a fingernail, it's a chip that's well on its way to transforming the face of computing.

Intel's 80386 micropro-

cessor was the "star of

the show," according to

published reports about

the COMDEX computer

show held in Las Vegas

New products based on

the 386 and the 82786

graphics coprocessor

in November, 1986.

In doing so, the 32-bit 386 is continuing an Intel legacy that began in 1971 when Intel engineers introduced the first microprocessor. Since then, Intel microprocessors have led the industry. . . in their performance levels as well as in their market-place acceptance.

The 386 was introduced late in 1985, and quickly exceeded virtually every corporate goal set for it...usually by substantial margins.

For example, more than two hundred companies have elected to use it in their products. These "design wins" came in a wide variety of applications, such as high-performance workstations, personal computers, telecommunications devices, artificial intelligence units and military systems. Production goals were exceeded by more than 200 percent, with the chip being manufactured at two Intel sites.

AN ALL-AROUND WINNER

There are many reasons for the chip's success. It runs an installed base of software worth more than \$10 billion, from both the MS/DOS* and UNIX* worlds. Its rich set of features allows it to power sophis-

ticated engineering workstations, an important market. Finally, the 386 can speed through programs devoted to artificial intelligence, a major growth field in the next decade.

Since volume production of the 386 did not start until the second half of 1986, the chip is only now beginning its financial contribution to Intel. The revenue star of Intel's microprocessor line in 1986 was the 80286, the 16-bit chip introduced in 1982.

The 286 is now entering the prime of its product life; approximately two million were sold in 1986. The 286 had more design wins this year than in all of the previous three years combined. These came not only in office computers—the 286 is used to power the popular IBM PC AT—but also in a growing list of other applications, such as industrial automation and telecommunications.

While Intel sells a wide range of components, boards, systems and software, microprocessors are the company's backbone. The combined marketplace success of the 386 and the 286 helps assure that Intel will remain on a solid foundation for many years to come.



*MS/DOS is a trademark of Microsoft UNIX is a trademark of Bell Labs

INTEL IS BUILDING **CLOSER RELATIONSHIPS** WITH ITS CUSTOMERS.

Intel is a "preferred supplier" among many

of its international

customers. At Intel's

quality support center in Swindon, England,

Intel's European Cus-

tomer Service Manager,

Colin Evans (left) and

customer Peter Lewis,

Purchasing Manager for International Com-

puters Limited (ICL),

discuss product test

correlation issues.

There was a time in the semi conductor industry when a sup plier could be complacent about customer relations and still suc ceed. But that day is long gone. Today, customers are expecting close relationships with suppliers -and they won't hesitate to switch companies in order to find them

Intel has responded to this challenge with a company-wide campaign called the "Preferred Supplier" program. Its goal has been to make customers eager to do business with Intel by giving them what they want most: quality parts delivered on time, backed by responsive service.

For Intel, the task of working closely with its customers is made especially challenging by the fact that there are more than 100,000 of them all over the world. Intel works directly with its biggest cus tomers—large corporations; the rest are serviced by a small group of select distributors chosen and trained by Intel.

By myolying virtually the entire company in the effort, Intelhas made striking improvements in customer relations. During the year, internal surveys showed a significant increase in the percentage of customers that rated Intel "excellent" as a supplier. And firms that used to complain about having to work with Intel now routh en cite it with special vendor awards

This means not only goodwill. of coarse, but also good business. Intels customers are sixing more and more of their business to Intel. rather than to its competitors.

ACTION IN MANY AREAS

One of the several ways letel included classifier satisfaction



was by reducing the detect rate of its parts (Low defect rates eliminate the Leed for expensive incoming inspections and allow customers to insert Intel semi conductors directly into their own products) At the end of the year. the overal "defects per malior" rate for components was approach. ing long the lowest if the industry By contrast typical defect rites III 1980 Wete S. Ou for every millior components

By working closely with its distributors, Interassures trat small companies received the same earls of support is argumes. The compart is striving to descriptivo uditish harros squasining that I is a unit to associate lite, to their costopiers

Interoffers Wild Ind. be the roduction by some strainer technical support system. For every two sales people. Intel has a field application engineer ready to work with customers on their designs. More than 90 percent are electrical engineers or committee scientists, and each has an average of more than SEV years. of experience

By showing that Intellisary thing but compacers about customer support, the "Preferred Supplier campagn has worners levels of customer LV atty - doi 2 with increased levels of busiless.

PRODUCTIVITY IN THE PAST TWO YEARS, AND PLANS TO DOUBLE IT AGAIN WITHIN THREE YEARS.

For much of its history, Intel's success was the result of offering the industry's most advanced semi conductor products, like the 80386 microprocessor. But to be profitable in today's increasingly competitive marketplace, a company's technical sophistication must be joined by absolute efficiency in its manufacturing process.

As a result, there has been a major corporate program in recent years to boost Intel's manufacturing productivity—a program that is meeting with striking success. While foreign chip makers have been receiving consider able attention for their low-cost production methods, Intel has

been quietly transforming itself into one of the world's most efficient producers of semiconductor products.

The company has doubled its manufacturing productivity since 1984, and productivity rates are expected to double again in the next three years. Better methods and more productive equipment account for much of this progress, as do closing certain plants that were no longer cost-effective, and shrinking the Intel workforce.

The dimensions of the improvement are notable. For example, the average cost of each step in the component manufac turing process has been cut by about 30 percent since 1984. In the last year alone, the average time it took for a single wafer to travel through the manufacturing line dropped by 20 percent.

To attain these increases. Intel engineers prodded, poked and tweaked the company's man ufacturing methods. Major efforts were made to increase the useful ness of Intel's machines by reducing their downtime. A growing list of components are now manufac tured on six-inch-diameter wafers. which have more than twice the capacity of their four-inch prede cessors. Fabrication plants now operate around the clock, six days a week, making more effective use of the expensive capital equipment inside them.

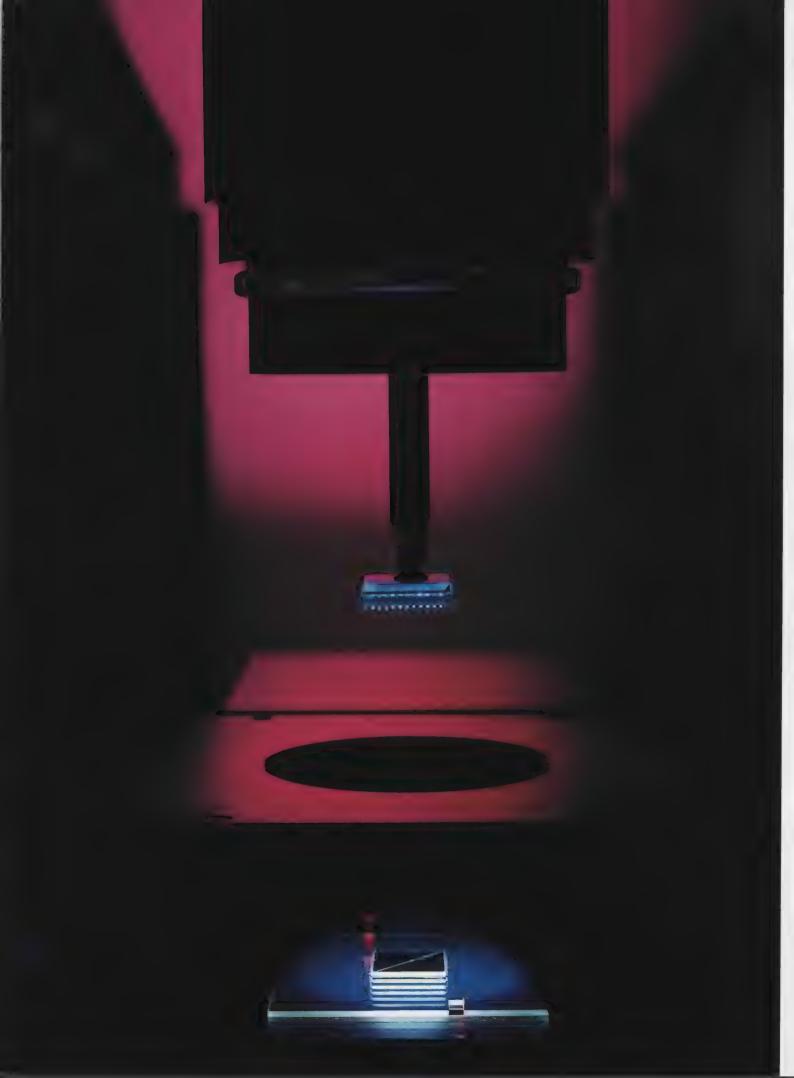
► A NEW GENERATION OF AUTOMATION

While most of Intel's manufactur ing is already heavily mechanized, the company is moving towards automated techniques to link machines and coordinate overall processes.

For example, Intel engineers are developing robots and auto mated vehicles that take parts from one manufacturing station and transfer them to the next one down the line. This speeds the movement of parts, reducing the amount of "work in progress" and giving another boost to productivity.

The spectacular productivity increases of recent years are a start. They prove Intel is not con ceding manufacturing battles to competitors anywhere. The company intends to be known for the efficiency of its manufacturing as much as for the power of its microprocessors.

Robotics in the factory help to improve manufacturing productivity. Pictured here is a flexible lead inspection system, developed and built by Intel's Component Factory Automation Group. This system replaces the human eye to allow faster, more accurate inspection of the leads on a packaged semiconductor component.



INTEL HAS ENTERED THE GROWING ASIC MARKET.

Until recently, most companies building computers or other systems usually picked their semi conductors from a list of standard. off-the-shelf products—like those sold by Intel.

But in recent years, new design technologies have enabled engineers at just about any company to design their *own* semi-

provide comprehensive ASIC ser vices to the industry. This new business unit is staffed by some of Intel's most experienced man agers, and represents a multi-year, \$75 million investment—a significant commitment made during a time characterized by so many economic difficulties in the industry.

array designs. Intel will also be able to use IBM's design automa tion and packaging technologies.

Intel brings to the ASIC world many advantages that no other company can equal. For example, its cell-based ASICs use the com pany's industry-standard micro processors and microcontrollers as cores. Intel also has the manu



The photolithographic process at Intel's ASIC wafer fabrication facilities is capable of producing images 1/100th the diameter of a human hair. Intel's ASIC organization, formed in 1986, is a separate business unit with its own service organization and manufacturing facilities.

conductors. These customized chips are called ASICs, for *application-specific integrated circuits*, and provide the exact configuration of logic and memory circuits for a specific need.

ASICs are a booming business. Virtually unknown before 1980, their current sales have grown to about \$5 billion, and are expected to more than double by the end of the decade. Since most ASICs solve problems that previously had been solved with standard semiconductors, some observers were predicting this new challenge would spell trouble for companies such as Intel.

But in October, after more than a year of preparation, Intel announced the details of its new ASIC business unit, one that will

COMPLETE ASIC SERVICE

Customers can come to Intel for help in every phase of ASIC development, from design through custom manufacturing. Intel is offering three widely used varieties of ASICs: "erasable, programmable logic devices," which are inexpensive, flexible custom chips; "gate arrays," which are networks of transistors configured to perform specific functions; and "cell-based" ASICs, high-performance ICs based on the designs of standard chips.

An important part of Intel's ASIC strategy is an agreement with IBM, which has extensive ASIC capabilities and experience. Under the terms of the agreement, Intel can offer its customers access to IBM's library of gate

facturing capabilities necessary for extremely high-quality, low-cost production.

Intel's ASIC organization is a separate business unit, with its own service group and manufacturing facilities. That means customers will enjoy the individual ized, responsive service they are accustomed to from smaller ASIC companies. And to bring design assistance close to customers. Intel has opened two regional design centers, with more to follow in 1987.

With its new ASIC organization, Intel is turning a potential threat into an opportunity, and is becoming a formidable force in an extremely important new market.

► INTEL HAS STRENGTHENED ITS LEADERSHIP IN EPROMS DESPITE INTENSIVE WORLDWIDE COMPETITION.

At Intel, EPROMs (erasable, programmable, read-only memories) and microprocessors can be considered the company's signature products. Intel invented and began selling both products in 1971, and continues today to pace the industry by bringing new levels of performance to these technologies. Though threatened in recent years by illegal competitive tactics from abroad, Intel remains a world leader in EPROMs.

EPROMs permanently store such information as computer programs, but may also be easily altered by customers to hold new data. Intel's first EPROM was a device that stored 2048 bits of data. Ensuing years found EPROM densities doubling frequently until, most recently, Intel introduced and became the first to produce large quantities of a one megabit (one million bit) EPROM. This latest addition to the EPROM family is capable of storing 500 times as much data as the

original device.

Today, Intel manufactures more EPROMs than any other company in the world. With devices ranging in density from 16 kilobits to one megabit in many different packages and versions, Intel also offers the industry's most complete EPROM product line. Intel tailors its EPROM devices to meet the specific needs of its many customers—which is one of the reasons that nearly one out of four of the world's EPROMs is sold by Intel.

plaint with the U.S. government. Ultimately, in an historic trade agreement with Japan, the matter was resolved favorably for the United States. The accord ordered Japan to immediately halt dump ing and to open its domestic markets to U.S. manufacturers. Intel and other semiconductor companies continue to monitor the agreement closely.

American suppliers filed a com

THREATS FROM ABROAD

In 1984, Intel and other American suppliers began losing EPROM sales to Japanese manufacturers, who were slashing prices to less than half of their actual manufacturing costs. This predatory pricing or "dumping"—selling parts at money-losing prices in order to destroy competitors—is illegal under U.S. trade laws.

To fight back, Intel and other

One of the more unusual of the vast array of products that incorporates Intel's EPROMs is this X-5 "fish finder" manufactured by Lowrance Electronics, Inc. The fish finder uses liquid crystal sonar to give fishermen and boaters a graphic view of what's going on underwater.



INTEL HAS DEVELOPED AN EXPANDING SYSTEMS OPERATION.

Intel is best known for its components, such as microprocessors and memory devices. These "building blocks" are sold to outside companies, which then combine them with the many other elements necessary for a microcomputer system.

Some customers, however, pre fer to have Intel perform some of these integration tasks. To serve their needs, the company provides board- and system-level products that take advantage of the many unique strengths of Intel's chips.

These products come in many forms, and have been an impor tant part of Intel for most of its history. In the mid-1970s, for example, Intel pioneered the development of single board computers, which made the power of the microprocessor available to many customers in an easy to use, cost-effective manner.

These modular building blocks are based on Intel's popular MUL TIBUS® standard for connecting boards within a single system. Since the introduction of MULTI BUS, more than a million single board computers have been sold.

From board products, the company went on to develop fully integrated microcomputer systems, such as Intel's System 310. These

systems can be configured with different microprocessors, varying amounts of memory and assorted software packages to match a customer's unique needs. They are now being used in scores of diverse applications.

Another part of Intel's systems operation is its development tools. These are emulators and debug gers that help engineers design and test products containing Intel parts. By shortening development times, these powerful systems products allow customers to respond swiftly to changing market conditions.

An important part of Intel's systems operation involves customer service. Service contracts accompany most systems sales, and there are more than 80 Intel service locations around the world.

THE REASON FOR SYSTEMS

The many parts of Intel's systems operation will continue to play a critical role at the company for several important reasons.

First, systems have been an important and stable source of revenue. Second, success in systems requires that Intel have an intimate knowledge of the needs of customers, as well as of the workings of the overall market. Possessing that sort of "systems awareness" is increasingly important for any kind of success in the semiconductor industry.



Several stock exchanges in the United States and Europe are among the financial institutions using Intel's System 310 to speed the processing of heavy volumes of transactions.

INTEL IS DEVELOPING A STRONG CAPABILITY IN MICROCOMMUNICATIONS.

These symbolic photos illustrate the simultaneous transmission of voice and data over the same telephone lines, which will be possible with the implementation of the Integrated Services Digital Network (ISDN). In 1986, Intel introduced chips that support the ISDN standard, furthering the corporation's presence in the microcommunications area.





In homes, offices and factories all over the world, microprocessor-based devices are enabling people to be more creative and productive in their lives and work. This explosion of microprocessor based machines can be considered the first phase of the revolution that Intel started in 1971, when it introduced the "computer on a chip."

Now the world is moving toward that revolution's second phase, and Intel is ready to be as active a participant in this new stage as it was in the first.

In this new revolution, people are becoming more productive as microsystems are linked together into networks. *Microcommunications*, as the field is called, is now generating more excitement than just about any other area of computing.

Microcommunications includes three kinds of networks, some of which transmit both voice and data messages. Wide Area Networks connect computers at faraway sites. Local Area Networks are used to link computers within, for example, an office. Small Area Networks join microprocessors and microcontrollers inside an individual computer system, such as a factory robot.

MOVING INTO MICROCOM

Intel has a long history of working with networks, and already has one of the industry's most complete families of networking products. It is therefore prepared to be a major force in this exciting new market.

In Wide Area Networks, for example, Intel this year introduced a set of chips that supports the Integrated Services Digital Network, the worldwide standard which allows both voice and data messages to be transmitted over a single telephone line. The company will be working with AT&T on these chips—the first semiconductor company to do so.

In Local Area Networks, Intel products are being used to create diverse networks in the factory as well as the office. The company's OpenNET™ networking strategy incorporates products at every level of integration, allowing computers running under different operating systems to communicate with each other.

In Small Area Networks, Intel's BITBUS™ standard has become an industry favorite for connect ing ICs inside factory robots.

Microcontrollers like Intel's 8051 are playing a growing role in cars, performing such important tasks as monitoring engine performance. (It has been estimated that within a decade, the demand for ICs from the automotive industry could exceed the entire 1985 semiconductor market.)

In addition to providing the market with advanced microcom munications products, Intel is involved in the field in other important ways. For example, it is active in developing industry wide networking standards, which help maintain its position as a leader.

In all, Intel intends to work closely with the field of microcommunications, continuing what it started 15 years ago when it gave the world the microprocessor.

INTEL IS FOCUSED ON SERVING THE INCREASINGLY INTERNATIONAL SEMICONDUCTOR MARKET.

Intel has offices throughout the world to serve its geographically diverse customer base. The company's office in Beijing serves the needs of Intel customers in the People's Republic of China; pictured here is William Huo, Intel Beijing's Field

Sales Engineer.

The semiconductor industry saw much of its development occur in Northern California's "Silicon Valley." Today, however, the industry is very much a worldwide affair; as customers have spread out around the globe, Intel has reached out to follow them.

While most of Intel's sales are still generated in the United States, a large percentage comes from overseas. That's true for two reasons.

First, many countries—such as Japan and Korea—have their own rapidly growing electronics industries that have enormous appetites for semiconductor products. Second, it is increasingly common for American electronics companies to move their manufacturing plants to offshore facilities, especially in Asia.

Both trends are giving Intel a distinctly international flavor. In Asia as well as in Europe, Intel maintains complete facilities, including sales and marketing offices, component testing sites and fully stocked warehouses. In Japan, for example, Intel employs about 400 people in sales, marketing, quality control and customer training. Similar operations are found in Europe. The company has also opened a sales office in Beijing, the People's Republic of China; it was one of the first American semiconductor firms to do so.

SERVING A GLOBAL MARKET

The reason for all of this activity, of course, is that the sales opportunities outside of the U.S. are substantial. For example, the Japanese semiconductor market is now as large as that of the United States.

European electronics manufacturers constitute an equally important target, as they lead the world in a number of important applications. Much of the current innovation in telecommunications and automotive engineering, for example, is taking place on that continent.

When dealing with the overseas branch of a newly relocated American firm, Intel knows that a decision to move offshore does not mean a company will suddenly be content with slower, less personal levels of service. Competition abroad is often sharper than in the United States. That means that to keep its customers, Intel must deliver the same levels of support they were accustomed to at home.

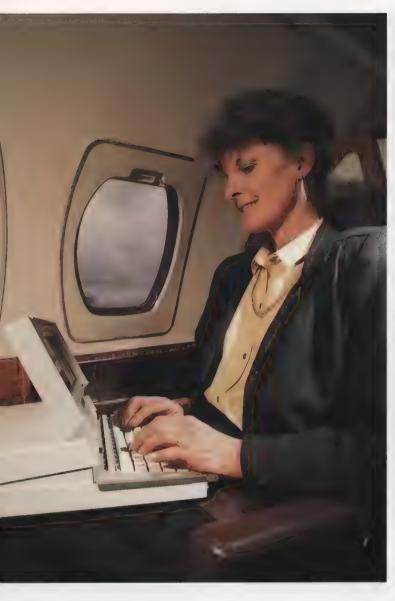
One way Intel is providing that support is through its unique overseas "correlation centers." These provide—in days, or even hours—on-site help to customers having problems with Intel products.

Because today's semiconductor customers are speaking many languages, Intel is making sure that it is fluent in all of them.





CHMOS HAS BECOME INTEL'S MAINSTREAM PROCESS TECHNOLOGY.



The incorporation of Intel's 80C88 microprocessor is what makes this laptop IBM PC Convertible personal computer such a good "traveler." The 80C88 is manufactured with a process called CHMOS, which allows the production of highly complex chips that need a minimum amount of power.

A desktop personal computer must be plugged into a wall outlet before it will work. But a laptop computer delivers the same processing power while running on ordinary flashlight batteries. Why?

It's because the chips inside the laptop are manufactured with a process called CMOS, for complementary metal oxide semiconductor. CMOS allows the production of highly complex ICs (integrated circuits) that need a minimum amount of power—often far less than that required by other semiconductors.

CMOS makes possible many popular consumer electronic items, such as hand-held calculators and digital watches. Until recently, however, the process was too expensive for applications in which low power consumption was not of critical importance.

With recent technical advances, costs have dropped. Now, the advantages of CMOS are so compelling that customers are expecting it to be used to make nearly all integrated circuits. They know they can use CMOS chips to build smaller, more efficient and less expensive products.

CHMOS-SATISFIED CUSTOMERS

In responding to market demand, Intel is taking advantage of its proprietary CHMOS (Comple mentary High-Performance MOS) process. CHMOS was developed by company engineers; it combines the low power of CMOS with the density and high perfor mance associated with other manufacturing methods.

In 1980, Intel made virtually no CHMOS parts; it is expected that, in a few years, virtually the entire Intel product line will be made with CHMOS.

Almost all new Intel products are manufactured with CHMOS, including the 80386 microproces sor. In fact, the 386 has so many transistors that, without CHMOS, it would require its own cooling fan because it would draw 25 watts of power, rather than the three watts it actually uses.

In addition to these new prod ucts, a growing list of ICs first manufactured under earlier fabrication technologies are being reintroduced to the market in CHMOS versions. Examples include the 8088 microprocessor and the 8051 microcontroller.

This reintroduction is giving new life to those products, as their low power requirements expand the number of applications in which they can be used. For example, the 8-bit 80C88 is being tapped to power a growing list of laptop computers.

Intel is continually developing new fabrication technologies. During 1987, the company will introduce the next generation of CHMOS, which will allow chips to be more than twice as dense as they are now.

With these sorts of steady, planned improvements, Intel can continue to rely on CHMOS to deliver the complex, efficient semiconductor products the market is demanding.

INTEL IS FINDING NEW WAYS TO INNOVATE.



Through its Personal
Computer Enhancement Operation, Intel
entered the retail
personal computer
after-market. Shown
here is a window display of Intel Above™
Board memory expansion products at Computers and Accessorys,
a San Jose, California
retail store.

Innovation is Intel's stock-intrade, and it happens on many fronts. One of the newest and most exciting is the Intel Development Organization, or iDO.

iDO's charter is to find innovative, profitable ways to take advantage of Intel strengths—especially its mastery of advanced semiconductor technology. While only a few years old, iDO has already taken Intel into some of the most established, as well as some of the newest, fields of computing.

iDO's technical innovation is matched by an equally innovative approach to organizational issues. Each iDO operation is a separate, self-contained unit, giving it the flexibility to adjust swiftly to changing market conditions.

IDO ADVANCES

☐ Through its Personal Computer Enhancement Operation (PCEO), Intel has entered the retail per sonal computer after-market with several products aimed primarily at business users. Above™ Board is an extremely popular memory expansion product that implements the Lotus/Intel/Microsoft Expanded Memory Specification. A new PCEO product is Inboard™ 386/AT, an add-in board that brings the power of the 80386 microprocessor to the IBM PC AT and compatible computers.

☐ By using many computers run ning simultaneously, "parallel computers" are tackling advanced computing problems in computational physics, oil reservoir modeling, artificial intelligence and other applications. In the future,

parallel computers are expected to provide computing performance well beyond that of traditional single-processor computers. Intel Scientific Computers (iSC) makes "massively parallel" computers by linking scores of 80286 microprocessors and 82586 Local Area Network communications coprocessors into a single computer, called the iPSC™ system.

iPSC systems give customers the kind of performance usually associated with "supercomputers." but at a much lower price. Because of their value, iPSC systems are finding their way into research and development in business. government and academia. ☐ Intel is working with Carnegie Mellon University to develop the special iWARP systolic array processor, a system that will run many times faster than similar devices used today. These machines will make possible new generations of devices for fields as diverse as medical imaging and robotic vision systems.

1 With communications becoming increasingly important in all fields of computing, Intel's Systems Interconnect Operation is marketing products—such as its new FASTPATH™ connectivity platform—that link mainframes, minicomputers and desktop microcomputers.

Founded just three years ago as a kind of corporate experiment, iDO has gone on to become a very successful part of Intel. Through it, the company is participating in important existing markets as well as creating valuable new ones.

NET REVENUES	\$1,2	265,011	\$1,	364,982	\$1	,629,332
Cost of sales		860,680		943,435		882,738
Research and development		228,250		195,171		180,168
Marketing, general and administrative		311,340		286,545		315,976
Restructuring of operations		60,000				
Operating costs and expenses	1	,460,270	1	,425,151		1,378,882
Operating income (loss)	(1	195,259)		(60,169)		250,450
Interest and other	20,625		54,721		47,69	
Income (loss) before taxes and extraordinary item	(1	174,634)		(5,448)		298,149
Provision (benefit) for taxes	8,650			(7,018)		99,960
Income (loss) before extraordinary item	(1	183,284)		1,570		198,189
Extraordinary gain on debt repayment		10,119				_
NET INCOME (LOSS)	\$ (1	173,165)	\$	1,570	\$	198,189
Earnings (loss) per capital and capital equivalent share						
Income (loss) before extraordinary item	\$	(1.57)	\$.01	\$	1.70
Extraordinary item		.09				
Net income (loss) per share	\$	(1.48)	\$.01	\$	1.70
Capital shares and equivalents		117,025		117,850		116,765

Consolidated **Statements** of Shareholders' **Equity**

Three Years Ended December 27, 1986	Capita	ıl Stock	Retained	Total	
(Thousands)	Number of shares	Amount	Earnings		
Balance at December 31, 1983	111,701	\$643,343	\$478,397	\$1,121,740	
Proceeds from sales of shares through employee stock plans, tax benefit of \$3,678 and other	2,044	37,236		37,236	
Proceeds from sale of shares	87	2,998	_	2,998	
Net Income	_	_	198,189	198,189	
Balance at December 31, 1984	113,832	683,577	676,586	1,360,163	
Proceeds from sales of shares through employee stock plans, tax benefit of \$1,448 and other	2,246	32,612	_	32,612	
Proceeds from issuance of warrants	_	27,136		27,136	
Net Income		_	1,570	1,570	
Balance at December 28, 1985	116,078	743,325	678,156	1,421,481	
Proceeds from sales of shares through employee stock plans	1,695	26,911		26,911	
Net (Loss)		-	(173,165)	(173,165)	
Balance at December 27, 1986	117,773	\$770,236	\$504,991	\$1,275,227	

See accompanying notes.

See accompanying notes.

ASSETS		
Current assets:	4	
Cash and temporary cash investments Short-term investments (at cost, which approximates market)	\$ 74,528	, ,
Accounts receivable, net of allowance for doubtful accounts of \$4,498	298,696	173,233
(\$4,656 in 1985)	298,378	305,102
Inventories	197,931	170,758
Prepaid taxes on income	105,298	88,849
Refundable income taxes	_	58,658
Other current assets	48,826	39,402
Total current assets	1,023,657	1,023,910
Property, plant and equipment:		
Land and buildings	529,964	431,183
Machinery and equipment Construction in progress	748,020	725,578
Construction in progress	86,081	181,621
I DOG A	1,364,065	1,338,382
LESS Accumulated depreciation	584,744	490,136
Property, plant and equipment, net	779,321	848,246
Long-term investments (at cost, which approximates market)	209,195	216,340
Investment in unconsolidated subsidiary	54,604	51,058
Other non-current assets	13,289	12,311
TOTAL ASSETS	\$2,080,066	\$2,151,865
•		
LIABILITIES AND SHAREHOLDERS' EQUITY Current liabilities:		
Short-term debt	\$ 112.055	å 00.000
Accounts payable	\$ 112,055 61,987	\$ 88,898 56,988
Deferred income on shipments to distributors	67,367	72,421
Accrued compensation and benefits	45,849	38,336
Other accrued liabilities	72,210	47,155
Income taxes payable	14,814	2,893
Total current liabilities	374,282	306,691
Long-term debt	286,600	270,831
Deferred taxes on income	132,441	133,956
Unamortized investment tax credits	11,516	18,906
Commitments and contingencies		
Shareholders' equity:		
Capital stock, no par value, 200,000 shares authorized, 117,773 issued and outstanding in 1986 (116,078 in 1985)	770,236	743,325
Retained earnings	504,991	678,156
Total shareholders' equity	1,275,227	1,421,481
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$2,080,066	\$2,151,865
		,,

(Certain 1985 amounts have been reclassified to conform to the 1986 presentation.) See accompanying notes.

Consolidated Statements of Changes in Financial Position Three Years Ended December 27, 1986 1985 (Thousands)

1984

			\$567,938
Increase (decrease) in working capital Working capital at beginning of year	(67,844) 717,219	149,281 567,938	(39,843 607,781
Income taxes payable	(11,921)	36,818	(21,449
Other accrued liabilities	(25,055)	1,351	(4,978
Accrued compensation and benefits	(7,513)	29,981	(38,462
Deferred income on shipments to distributors	5,054	15,992	(14,729
Accounts payable	(4,999)	22,912	(761
Short-term debt	(23,157)	(23,365)	15,549
Other current assets	9,424	13,703	2,025
Refundable income taxes	(58,655)	28,655	30,000
Inventories Prepaid taxes on income	16,449	(9,669)	32,875
Accounts receivable Inventories	27,173	(48,556)	67,411
Short-term investments Accounts receivable	(6,724)	(49,033)	51,101
Cash and temporary cash investments	\$(113,383) 125,463	\$ 98,499 31,993	\$ 5,743 (164,168
Increase (decrease) in working capital by component:	¢(110.000)	¢ 09 400	¢ = 740
Increase (decrease) in working capital	\$(67,844)	\$149,281	\$(39,843
Total working capital used	248,129	445,905	443,540
Retirement of long-term debt	59,701	7,567	
Investment in unconsolidated subsidiary	3,546	51,058	
Long-term investments, net	30,055	151,064	55,095
Additions to property, plant and equipment	154,827	236,216	388,445
Working capital used for:			
Total working capital provided	180,285	595,186	403,697
Proceeds from sale of capital stock	_	<u> </u>	2,998
Proceeds from issuance of warrants, net of issuance costs	20,511	27,136	- O1,200
Proceeds from sales of shares through employee stock plans (and in 1985 and 1984, tax benefits thereof and other)	26,911	32,612	37,236
Additions to long-term debt, net	65,710	126,633	18,720
Other assets, net	(978)	8,741	5,023
Sale of long-term marketable securities	37,200	206,471	
Extraordinary gain on debt repayment	10,119	_	
Working capital provided by:			
Total working capital provided by operations before extraordinary item	41,323	193,593	339,720
Non-current portion of deferred taxes on income and unamortized investment tax credits	(8,905)	20,312	27,776
Amortization of debt discount	9,760	5,459	_
Net retirements	50,249	12,130	5,081
Depreciation	173,503	154,122	108,674
Items not involving the current use of working capital:	(100,201)	4 1,010	4 100,100
Income (loss) before extraordinary item	\$(183,284)	\$ 1,570	\$ 198,189

(Certain 1985 and 1984 amounts have been reclassified to conform to the 1986 presentation.) See accompanying notes.

Notes to Consolidated Financial **Statements**

December 27, 1986. December 28, 1985 and December 31, 1984

ACCOUNTING POLICIES

Fiscal Year In 1985 the Company changed its accounting period from a fiscal year ended December 31 to a fiscal year ended the last Saturday in December. This change had no material effect on the Company's 1985 financial statements. Fiscal year 1986, a 52 week year, ended on December 27, 1986. The next 53 week year will end on December 31, 1988.

Basis of Presentation The consolidated financial statements include the accounts of Intel Corporation and all of its wholly-owned subsidiaries, except for its banking subsidiary, the investment in which is accounted for under the equity method. Because of the nature of its operations, the assets and liabilities of this offshore subsidiary are not consolidated. Accounts denominated in foreign currencies have been translated in accordance with FASB Statement No. 52, using the U.S. dollar as the functional currency.

Inventories Inventories are stated at the lower of cost or market. Cost is computed on a currently adjusted standard basis (which approximates average or first-in. first-out cost). Market is based upon estimated realizable value reduced by normal gross margin. Inventories at fiscal year-ends are as follows:

(Thousands)	1986	1985
Materials and purchased parts	\$ 40,368	\$ 43,007
Work in process	78,413	57,629
Finished goods	79,150	70,122
Total	\$197,931	\$170,758

Property, Plant and Equipment Property, plant and equipment are stated at cost. Depreciation is computed for financial reporting purposes principally by use of the straight-line method over the estimated useful lives of the assets. Accelerated methods of computing depreciation are used for tax purposes.

Deferred Income on Shipments to Distributors Certain of Intel's sales are made to distributors under agreements allowing price protection and right of return on merchandise unsold by the distributors. Because of frequent sales price reductions and rapid technological obsolescence in the industry, Intel defers recognition of such sales until the merchandise is sold by the distributors.

Investment Tax Credits Investment tax credits are accounted for using the deferral method whereby credits are treated as a reduction of the U.S. federal tax provision ratably over the useful lives of the related assets.

Computer Software The Company has adopted FASB Statement No. 86 effective December 29, 1985. The impact on the 1986 financial statements is immaterial.

Earnings (Loss) Per Share Loss per share for the year ended December 27, 1986 is calculated using the weighted average number of capital shares outstanding for the period. Capital equivalent shares are not included in loss years. Dilutive capital equivalent shares are included in the calculation of earnings per share for the years ended December 28, 1985 and December 31, 1984.

RESTRUCTURING OF OPERATIONS

The 1986 statement of operations includes a non-recurring \$60 million charge to operations for restructuring. The charge was made in the third quarter and is related to the Company's decisions to close its Barbados assembly plant, phase out its Puerto Rico test plant, reduce the workforce at its other Puerto Rico facilities and sell its bubble memory business (Magnetics). The charge covers the diminished value of assets, employee termination charges and other support costs related to these actions.

BORROWINGS

Short-term debt Short-term debt at December 27, 1986 consists of \$17.4 million of notes payable and \$94.7 million borrowed under foreign and domestic lines of credit. At December 27, 1986 Intel and its subsidiaries had established foreign and domestic lines of credit of approximately \$600 million. These lines are generally renegotiated on an annual basis. Intel complies with compensating balance requirements related to certain of these lines of credit; however, such requirements are immaterial and do not legally restrict the use of cash. The weighted average interest rate on short-term debt outstanding at December 27, 1986 approximated 5.0%.

On July 7, 1986 the Company began borrowing under a commercial paper program in the U.S. under which aggregate outstanding maturities reached \$300 million. This debt is rated A1 by Standard and Poor's and P1 by Moody's Investor Service. The proceeds are used to fund short-term working capital needs of the Company. There were no commercial paper obligations outstanding as of December 27, 1986.

Long-term debt Long-term debt at fiscal year-ends is as follows:

(Thousands)	1986	1985
Payable in U.S. dollars:		
1983 Series A Industrial, Medical and Environmental Pollution Control		
Revenue Bonds	\$ 80,000	\$ 80,000
1983 Series B Industrial, Medical and Environmental Pollution Control	,	, , , , ,
Revenue Bonds	30,000	30,000
Zero Coupon Notes, net of unamortized		
discount of \$145,660 (\$155,420 in 1985)	90,840	81,080
Other U.S. dollar debt	4,500	4,500
Payable in other currencies:		
Yen Guaranteed Bonds	32,279	41,571
Yen Promissory Notes	16,270	_
Yen Japanese Government Bonds	20,211	_
Other foreign currency debt	12,580	38,212
(Less current portion of long-term debt)	(80)	(4,532)
Total long-term debt	\$286,600	\$270,831

Proceeds of \$80 million from the Adjustable Rate Industrial Revenue Bonds issued in September, 1983 (the 1983 Series A Bonds) and \$30 million issued in December, 1983 (the 1983 Series B Bonds) by the Puerto Rico Industrial, Medical and Environmental Pollution Control Facilities Financing Authority (the Authority) have been loaned to the Company. In accordance with loan agreements between the Company and the Authority, the Company has guaranteed repayment of principal and interest on these Bonds, which are subject to redemption prior to maturity upon the occurrence of certain events. The 1983 Series A Bonds are due September 1, 2013, bear interest at 8% through August 1988 and are adjustable and redeemable (at the option of either the Company or the bondholder) every five years beginning September 1988 through September 2008 in accordance with certain formulas. The 1983 Series B Bonds are due December 1, 2013, bear interest at 7.95% through November 1988 and are adjustable and redeemable (at the option of either the Company or the bondholder) every five years beginning December 1988 through December 2008 in accordance with certain formulas. As a result of the redemption options, this debt has been included in the 1988 debt maturities noted below.

In connection with these agreements, the Company is obligated to spend a total of \$110 million to finance expansion in Puerto Rico. As of December 27, 1986, the Company had spent \$86.1 million. The remainder of the Company's commitment is restricted, invested in shortterm and long-term interest-bearing instruments and included in long-term investments. (See Investments.)

On May 20, 1985 the Company issued \$236.5 million aggregate principal amount of zero coupon notes with detachable warrants. The warrants entitle the holders to purchase 5,912,000 shares of Capital Stock reserved for issuance at an exercise price of \$40 per share through May 15, 1995. These warrants are subject to acceleration by Intel upon the occurrence of certain events. \$27.1 million, representing the original value of the warrants net of related offering expenses, is included in paid-in capital. The notes are due May 15, 1995 and have an effective yield to maturity of 11.75%, compounded semiannually, with interest paid at maturity. As of December 27, 1986, \$90.8 million of notes were outstanding, net of unamortized discount.

On January 29, 1985 the Company issued Yen 12.5 billion 65% Yen Guaranteed Bonds due January 29, 1992. As of December 27, 1986 Yen 5.3 billion (approximate U.S. dollar equivalent of \$32 million) were outstanding and invested in short-term and long-term interest-bearing instruments. The loan has been hedged for currency fluctuations, resulting in an effective dollar interest rate of

On June 27, 1986 the Company borrowed Yen 2.7 billion (approximate U.S. dollar equivalent of \$16 million) under promissory note agreements maturing February 10, 1992. Proceeds of the borrowings have been used to repurchase a portion of the 65% Yen Guaranteed Bonds described above. The notes have been hedged for currency fluctuations, resulting in an effective dollar interest rate of 10.25%.

On July 21, 1986 the Company borrowed Yen 3 billion (approximate U.S. dollar equivalent of \$20 million) 7.7% Japanese Government Bonds maturing February 20, 1992 under a securities borrowing arrangement. In connection with this transaction, the Company sold these bonds at a premium and invested the proceeds from the sale in shortterm and long-term Yen denominated interest-bearing instruments. The premium will be amortized over the term of the borrowing, yielding an effective Yen interest rate of 5.7%. Under this arrangement the Company is obligated to return the Bonds or their equivalent Yen denominated face value at maturity.

Approximately \$39 million of short-term and longterm debt owed to an agency of a foreign government as of December 28, 1985 was repaid in 1986 as a result of an agreement between Intel and the foreign government. Under that agreement, the foreign government assumed the full indebtedness of Intel to the agency in consideration for a cash payment from Intel to the foreign government. An extraordinary gain amounting to \$10.1 million was realized as a consequence of the debt repayment.

As of December 27, 1986, aggregate debt maturities are as follows: 1987-\$.1 million; 1988-\$116.1 million; 1989-\$6.1 million; 1990-\$0; 1991-\$0; and thereafter-\$310.0 million.

INVESTMENTS

Investments consist of marketable securities, Eurodollar deposits, precious metals which are hedged by forward contracts, unrealized gains on long-term currency swaps, and investments under repurchase agreements. Investments denominated in foreign currencies are hedged by forward contracts. Investments with maturities of greater than one fiscal year and restricted investments are classified as long-term. In addition, the Company has entered into contractual agreements (interest rate swaps) to hedge certain investment positions against fluctuations in interest rates. The Company records net interest expense or net interest income related to these transactions on a monthly basis.

INVESTMENT IN UNCONSOLIDATED SUBSIDIARY

During 1985 the Company formed a wholly-owned offshore banking subsidiary which is accounted for under the equity method. Assets of this subsidiary of \$57 million as of December 27, 1986 consist primarily of loans to third-party financial institutions. Earnings of the subsidiary in 1986 were \$3.5 million.

INTEREST AND OTHER

(Thousands)	1986	1985	1984
Interest income	\$41,566	\$53,345	\$57,063
Interest expense	(36,325)	(19,408)	(11,336)
Foreign currency gains	3,007	5,449	4,300
Other income (expense)	12,377	15,335	(2,328)
Total	\$20,625	\$54,721	\$47,699

Interest expense for 1986, 1985, and 1984 excludes \$2,429,000, \$6,273,000, and \$3,642,000, respectively, which was capitalized as a component of construction costs. Other income for 1986 includes income from equity investments hedged with market index futures contracts, income from hedged precious metal investments, equity income from its banking subsidiary and income from other investments. Other income in 1985 includes gains from the sale of long-term marketable securities and income from other investments.

PROVISION (BENEFIT) FOR TAXES

Income (loss) before taxes and extraordinary item and the provision (benefit) for taxes consist of the following:

(Thousands)		1986	1985	1984
Income (loss) before taxes and extraordinary item:				
U.S.	\$	(222,713)	\$(56,949)	\$159,535
Foreign		48,079	51,501	138,614
Total income (loss) before taxes and extraordinary item	\$	(174,634)	\$ (5,448)	\$298,149
Provision (benefit) for taxes: Federal:				
Current	\$	20,814	\$(62,639)	\$ 34,756
Deferred (prepaid)		(28,673)	31,650	5,865
		(7,859)	(30,989)	40,621
State:				
Current		_	_	20,718
Deferred (prepaid)			_	(2,829)
		_	_	17,889
Foreign:	_			
Current		13,190	25,640	38,962
Deferred (prepaid)		3,319	(1,669)	2,488
		16,509	23,971	41,450
Total taxes on income	\$	8,650	\$ (7,018)	\$ 99,960
Effective tax rate		_		34%

The provision (benefit) for taxes reconciles to the amount computed by applying the statutory Federal rate to income (loss) before taxes and extraordinary item as follows:

(Thousands)	1986	1985	1984
Computed expected tax	\$ (80,332)	\$(2,506)	\$137,149
U.S. operating loss carryforward	86,454		
State taxes, net of Federal benefits	_	_	9,660
Amortization of investment tax credits	(6,700)	(9,470)	(9,177)
Research and experimental credit	(2,902)	(7,900)	(9,796)
Reversal of deferred tax on prior years' DISC income		(-,000)	(19,300)
Provision for combined foreign and U.S. taxes on certain foreign income at			(10,000)
rates in excess of U.S. rate	7,157	11,181	_
Other	4,973	1,677	(8,576)
Provision (benefit) for taxes	\$ 8,650	\$(7,018)	\$ 99,960

The 1984 reversal of deferred tax on prior years' DISC income is due to the Tax Reform Act of 1984 which provided for the forgiveness of such deferred tax for the years 1972 through 1984.

In 1986, settlement of certain Internal Revenue Service examination adjustments for the years 1978 through 1982 resulted in an increase in prepaid taxes and a corresponding increase in taxes currently payable. Deferred (prepaid) income taxes result from differences in the timing of certain revenue and expense items for tax and financial reporting purposes. The sources and tax effects of these differences are as follows:

(Thousands)	1986	1985	1984
Inventory valuation	\$ (8,773)	\$(18,662)	\$(20,150
Distributor sales and other reserves	_	3,695	(6,339)
Undistributed earnings of foreign subsidiaries and			
DISC	4,059	24,077	(6,911)
Deferred ITC	(7,390)	(954)	4,404
Depreciation	(4,547)	13,002	28,783
Prepaid medical benefits		6,939	_
State and local tax accruals		4,807	(2,919)
Other, net	(8,703)	(2,923)	8,656
Deferred (prepaid) income			
taxes	\$(25,354)	\$ 29,981	\$ 5,524

The Company has a U.S. operating loss carryforward from 1986 of approximately \$187 million for financial reporting purposes, which is available to reduce tax expense in future periods. For tax reporting purposes, the Company has a net operating loss carryforward of approximately \$268 million, which if unused would expire in 2001. The tax net operating loss carryforward exceeds the loss carryforward for financial reporting purposes by \$81 million, primarily due to changes in inventory and other currently nondeductible reserves, accelerated depreciation, and unremitted earnings of certain subsidiaries. The Company intends to elect to carry forward its net operating loss since previous years' tax liabilities have been offset by available tax credits.

The Company also has foreign tax credit carryforwards of approximately \$26 million (expiring beginning in 1990), and investment and other credit carryforwards of approximately \$10 million (expiring beginning in 2000) which are available to reduce future U.S. tax liabilities.

In addition, the Company has unbenefited foreign loss carryforwards of approximately \$70 million which are available to reduce future taxes under the laws of the various foreign jurisdictions.

The Company's U.S. income tax returns for the years 1978 through 1982 are presently under examination by the Internal Revenue Service. Management believes that adequate amounts of tax have been provided for any additional adjustments which may result.

The Tax Reform Act of 1986 was passed in October 1986. The Act had no material effect on the Company's 1986 results of operations.

EMPLOYEE BENEFIT PLANS

Stock Option Plans Intel has stock option plans under which officers and key employees may be granted options to purchase shares of Intel's authorized but unissued capital stock at not less than the fair market value at date of grant.

Options currently expire no later than ten years from date of grant. No material charges have been made to income in accounting for options. Proceeds realized by Intel as a result of transactions in these plans are credited to capital stock. Income tax benefits are credited to capital stock only for those years in which the Company

can realize the benefits. Additional information with respect to employee stock options is as follows:

(Thousands)	Shares	Outstanding Options		
	Available For Options	Number of Shares	Aggregate Price	
December 31, 1983	2,595	10,244	\$181,843	
Additional shares reserved	15,000	_	_	
Options granted	(3,164)	3,164	108,727	
Options exercised	_	(1,288)	(12,610)	
Options cancelled	629	(629)	(13,726)	
Options cancelled under expired plans	(60)	_	_	
December 31, 1984	15,000	11,491	\$264,234	
Options granted	(7,072)	7,072	174,004	
Options exercised	` —	(1,287)	(14,743)	
Options cancelled	5,272	(5,272)	(175,271)	
Options cancelled under expired plans	(53)	_		
December 28, 1985	13,147	12,004	\$248,224	
Options granted	(11,694)	11,694	237,882	
Options exercised		(869)	(10,573)	
Options cancelled	10,076	(10,076)	(254,203)	
Options cancelled under expired plans	(24)	_		
December 27, 1986	11,505	12,753	\$221,330	
Options exercisable at:				
December 31, 1984		1,759	\$ 15,207	
December 28, 1985		3,736	\$ 55,092	
December 27, 1986		2,637	\$ 32,360	

On October 20, 1986 and December 17, 1984, employees holding options to purchase 9,577,000 and 5,198,000 shares, respectively, of Intel capital stock were offered the opportunity to exchange their existing options for the same number of options at the then current market price. These offers were made because management believed that the higher-priced options were no longer a motivating factor for key employees and officers. As of December 27, 1986, 8,775,000 shares related to the 1986 regrant were exchanged and are reflected in the cancellation and grant activity for 1986. As of December 31, 1984, no exchanges of the 1984 regrant had taken place and accordingly, all cancellations and regrants of options related to these exchanges are included in 1985 activity.

The average exercise price for options outstanding at December 27, 1986 was \$17.36 while the range of individual exercise prices was \$5.00 to \$42.13. Individual options outstanding at that date will expire if not exercised at specific dates ranging from January 1987 to December 1996. The range of exercise prices for options exercised during the three year period ended December 27, 1986 was \$1.38 to \$29.94.

Stock Participation Plan Under this plan, qualified employees are entitled to purchase shares of Intel's capital stock at 85% of the fair market value at certain specified dates. Of the 13,000,000 shares authorized to be issued under this plan, as amended, 5,291,000 shares are available for issuance at December 27, 1986. Employees purchased 886,000 shares in 1986 (1,011,000 and 781,000 in 1985 and 1984, respectively) for \$17,748,000 (\$23,053,000 and \$22,137,000 in 1985 and 1984, respectively).

Profit Sharing Retirement Plan Effective July 1, 1979. Intel adopted a profit sharing retirement plan for the benefit of qualified employees. The plan is designed to provide employees with an accumulation of funds at retirement and provides for annual contributions to trust funds based on formulas determined by the Board of Directors. Nothing was accrued under the profit sharing retirement plan for 1986 or 1985. \$33,170,000 was accrued for 1984.

Effective January 1, 1987, contributions made by Intel to the plan will generally vest ratably over a three to seven year period based on length of service (certain portions will vest immediately). Prior to 1987, contributions generally vested five years after each plan year or upon retirement (certain portions vested immediately). In 1985 the IRS approved amendments providing for the accelerated vesting of certain previously unvested fund assets for terminated plan participants. It is management's intention to fund contributions on a current basis.

In addition to the contributions noted above, approximately \$1,725,000, \$1,643,000 and \$1,471,000 in 1986, 1985 and 1984, respectively, was accrued for the Company's Payroll Based Tax Credit Employee Stock Ownership Plan (PASOP) program. Under this program, shares of Company stock are purchased for the benefit of qualified employees based on a percentage of qualified compensation, as defined. Shares credited to employees under this program vest immediately and are subject to withdrawal upon the earlier of termination of employment or 84 months from date of contribution.

COMMITMENTS

Intel leases a portion of its capital equipment and certain of its facilities under leases which expire at various dates through 2009. Rental expense was \$34,100,000 in 1986, \$33,400,000 in 1985, and \$29,500,000 in 1984. Minimum rental commitments under all non-cancelable leases with an initial term in excess of one year are payable as follows: 1987—\$23,300,000; 1988—\$17,100,000; 1989-\$13,200,000; 1990—\$7,800,000; 1991—\$3,500,000; 1992 and beyond—\$5,900,000.

Commitments for construction or purchase of property, plant and equipment approximated \$87 million at December 27, 1986.

Financial inducements have been provided to Intel to construct and equip certain manufacturing facilities within a foreign country. The financial inducements included a combination of grants and, through 1986, low-interest loans to fund a major portion of this project. Although the loans, secured by the facilities and equipment, were repaid during 1986, the Company has agreed to continue operating its facilities within that country. (See Borrowings.)

CONTINGENCIES

The Company is a defendant in a lawsuit filed by Hughes Aircraft Corporation (Hughes) in a U.S. Federal Court in 1983. The suit alleges that the Company willfully infringed and continues to infringe three patents relating to ion implantation. One of the patents on which Hughes alleges infringement expired in October 1986. Hughes' complaint seeks unspecified monetary damages and an injunction against further alleged infringement. This case is not currently set for trial and it is contingent upon the resolution of another lawsuit by a third party against Hughes for which no trial date has been set.

The Company believes it has several meritorious defenses to the lawsuit and is contesting the lawsuit vigorously. The ultimate outcome of this matter cannot be determined at this time. Management, including internal counsel, does not believe that the outcome will have a material adverse effect on the Company's financial position or overall trends in results of operations.

The Company has been named to the California and Federal Superfund lists for three of its sites and has signed a consent order with the Federal Environmental Protection Agency (EPA) to perform a Remedial Investigation/Feasibility Study to evaluate the ground water in a certain area related to one of its sites. In addition, the Company has done extensive cleanup and studies of its sites. Although the liability, if any, to the Company arising out of these matters cannot be determined at this time, in the opinion of management, the ultimate resolution will not have a material adverse effect on the Company's financial position or overall trends in results of operations.

The Company is party to various other legal proceedings. In the opinion of management, these proceedings will not have a material adverse effect on the financial position or overall trends in results of operations of the Company.

INDUSTRY SEGMENT REPORTING

Intel and its subsidiaries operate in one dominant industry segment. The Company is engaged principally in the design, development, manufacture, and sale of semiconductor components and related products. In 1986, 1985 and 1984, approximately 5.7%, 19.9% and 11.9%, respectively, of Intel's revenues were derived from sales to one significant customer. (See Related Party Transactions.)

Major operations outside the United States include manufacturing facilities in Israel, Malaysia, the Philippines, and Singapore, and sales subsidiaries throughout Europe and other parts of the world. Summary balance sheet information for operations outside of the United States at fiscal year-ends is as follows:

(Thousands)	1986	1985
Total assets	\$513,544	\$496,780
Total liabilities	\$202,634	\$192,547
Net property, plant and equipment	\$156,641	\$174,857

Geographic information for the three years ended December 27, 1986 is presented in the tables below. Transfers between geographic areas are accounted for at amounts which are generally above cost and consistent with rules and regulations of governing tax authorities. Such transfers are eliminated in the consolidated financial statements. Operating income by geographic segment does not include an allocation of general corporate expenses. Identifiable assets are those assets that can be directly associated with a particular geographic area. Corporate assets include principally cash, short-term investments, prepaid taxes on income and refundable income taxes.

(Thousands)	U.S.	Europe	Other	Eliminations	Corporate	Consolidated
1986						
Sales to unaffiliated customers	\$ 760,895	\$338,779	\$165,337	(500 050)	\$ —	\$1,265,011
Transfers between geographic areas	365,994	5,763	132,101	(503,858)		
Net revenues	\$1,126,889	\$344,542	\$297,438	\$(503,858)	\$ —	\$1,265,011
Operating income (loss)	\$ (145,667)	\$ 33,943	\$(20,364)	\$ 8,596	\$(71,767)	\$ (195,259)
Identifiable assets	\$1,237,780	\$155,534	\$358,010	\$(103,017)	\$431,759	\$2,080,066
1985						
Sales to unaffiliated customers	\$ 893,410	\$361,523	\$110,049	\$ —	\$ —	\$1,364,982
Transfers between geographic areas	315,586		113,134	(428,720)		
Net revenues	\$1,208,996	\$361,523	\$223,183	\$(428,720)	\$ —	\$1,364,982
Operating income (loss)	\$ (19,334)	\$ 43,681	\$ 202	\$ 14,673	\$(99,391)	\$ (60,169)
Identifiable assets	\$1,315,396	\$159,554	\$337,226	\$(120,139)	\$459,828	\$2,151,865
1984						
Sales to unaffiliated customers	\$1,159,392	\$317,947	\$151,993	\$ —	\$ —	\$1,629,332
Transfers between geographic areas	310,549		107,856	(418,405)		
Net revenues	\$1,469,941	\$317,947	\$259,849	\$(418,405)	\$ —	\$1,629,332
Operating income	\$ 259,722	\$ 45,477	\$ 49,381	\$ (12,742)	\$(91,388)	\$ 250,450
Identifiable assets	\$1,429,541	\$143,463	\$254,286	\$ (97,868)	\$299,977	\$2,029,399

RELATED PARTY TRANSACTIONS

In February, 1983 International Business Machines Corporation (IBM) became a related party due to its purchase of Intel stock. In 1984 the Company sold an additional 86,509 shares of previously authorized but unissued capital stock to IBM in accordance with an agreement reached in December 1982. As of December 27, 1986 and December 28, 1985, IBM owned less than 20% of Intel's outstanding capital stock. In 1986 approximately 5.7% of Intel's revenues were derived from sales to IBM (19.9% in 1985 and 11.9% in 1984). In addition, Intel had purchases from IBM (including lease obligations) of approximately \$5 million in 1986 (\$7 million in 1985) and \$24 million in 1984). Amounts receivable from and payable to IBM are immaterial at December 27, 1986 and December 28, 1985.

SUPPLEMENTAL INFORMATION (unaudited) Quarterly Information Quarterly information for each of the two years in the period ended December 27, 1986 is presented on page 29.

REPORT OF CERTIFIED PUBLIC ACCOUNTANTS

The Board of Directors and Shareholders Intel Corporation

We have examined the accompanying consolidated balance sheets of Intel Corporation at December 27, 1986 and December 28, 1985, and the related consolidated statements of operations, shareholders' equity and changes in financial position for each of the three years in the period ended December 27, 1986. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the statements mentioned above present fairly the consolidated financial position of Intel Corporation at December 27, 1986 and December 28, 1985, and the consolidated results of operations and changes in financial position for each of the three years in the period ended December 27, 1986, in conformity with generally accepted accounting principles applied on a consistent basis during the period.

Arthur Young & Company San Jose, California January 12, 1987

Financial Information **By Quarter**

(unaudited)

(Thousands-except per share data)	Quarter Ended					
	Dec.27	Sept.27	Jun.28	Mar.29		
1986	4077.040					
Net revenues	\$355,642	\$ 324,137	\$305,178	\$280,054		
Cost of sales	\$233,111	\$ 238,944	\$198,113	\$190,512		
(Loss) before extraordinary item	\$(16,422)	\$(114,210) ^D	\$(22,876)	\$(29,776)		
(Loss) per share ^c	\$ (.14)	\$ (.97)	\$ (.19)	\$ (.26)		
Net (loss)	\$(16,422)	\$(114,210) ^D	\$(20,353)	\$(22,180)		
Net (loss) per share ^c	\$ (.14)	\$ (.97)	\$ (.17)	\$ (.19)		
Market price range High Capital stock ^A Low	\$ 23.50 \$ 18.50	\$ 23.00 \$ 16.63	\$ 31.00 \$ 22.50	\$ 32.00 \$ 25.50		
Market price range High Warrants ^a Low	\$ 6.88 \$ 5.63	\$ 6.75 \$ 4.25	\$ 8.38 \$ 5.63	\$ 7.13 \$ 5.63		

		Quarter Ended					
	Dec.28	Sept.28	Jun.29	Mar.30			
1985 Net revenues	\$317,946	\$ 311,741	\$360,046	\$375,249			
Cost of sales	\$238,355	\$ 216,160	\$240,977	\$247,943			
Net income (loss) Earnings (loss) per capital and capital equivalent share	\$(14,905) ^B \$ (.13) ^c	\$ (3,596) ^B \$ (.03) ^C	\$ 9,247 \$.08	\$ 10,824 \$.09			
Market price range High Capital stock ^a Low	\$ 30.75 \$ 21.75	\$ 29.75 \$ 24.75	\$ 29.25 \$ 23.00	\$ 32.00 \$ 24.50			
Market price range High Warrants ^A Low	\$ 7.25 \$ 5.00	\$ 7.38 \$ 5.13	\$ 5.25 \$ 4.00	\$ <u>-</u>			

A Intel's capital stock and warrants are traded in the over-the-counter market and are quoted on NASDAQ and in the Wall Street Journal and other newspapers. At December 27, 1986 there were approximately 21,503 holders of capital stock and 296 holders of warrants. Warrant prices are given only from the time of issuance (May 1985). Intel has never paid cash dividends and has no present plans to do so.

B Net losses for the quarters ended December 28 and September 28, 1985 include \$9.7 million and \$5.6 million, respectively, of gains realized on the sale of long-term marketable securities and income from other investments.

c Loss per share for all quarters of 1986 and the quarters ended December 28 and September 28, 1985 is calculated using the weighted average number of capital shares outstanding for the period. Capital equivalent shares are not included in loss quarters.

December 27, 1986 includes a \$60 million charge for restructuring of operations.

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Ten Years Ended December 27, 1986 (Thousands-except per share amounts)

	Net Investment	Total Assets	Long Term	Share- holders'	s' Provided By:		Working Capital Used
	In Plant & Equip.		Debt	Equity	Operations	Employee Stock Plans	for Additions to Plant & Equip.
1986	\$779,321	\$2,080,066	\$286,600	\$1,275,227	\$ 41,323	\$26,911	\$154,827
1985	848,246	2,151,865	270,831	1,421,481	193,593	32,612	236,216
1984	778,282	2,029,399	146,306	1,360,163	339,720	37,236	388,445
1983	503,592	1,679,650	127,586	1,121,740	239,183	56,780	144,974
1982	461,625	1,056,452	197,143	551,853	135,570	33,990	138,085
1981	411,747	871,517	150,000	487,817	118,283	27,598	157,426
1980	320,559	767,168	150,000	432,860	157,606	32,930	156,006
1979	217,391	500,093	_	303,189	124,961	19,869	96,681
1978	160,140	356,565	_	205,062	78,025	12,025	104,157
1977	80,117	221,246	_	148,942	49,777	7,766	44,881

	Net	Cost	Research &	Operating	Net Incon	ne (Loss)	
	Revenues	Of Sales	Development	Income (Loss)	Total	Per Share	
1986	\$1,265,011	\$860,680	\$228,250	\$(195,259)	\$(173,165)	\$(1.48)	
1985	1,364,982	943,435	195,171	(60,169)	1,570	.01	
1984	1,629,332	882,738	180,168	250,450	198,189	1.70	
1983	1,121,943	624,296	142,295	138,717	116,111	1.05	
1982	899,812	541,928	130,801	28,443	30,046	.32	
1981	788,676	458,308	116,496	29,579	27,359	.31	
1980	854,561	399,438	96,426	183,120	96,741	1.11	
1979	660,984	313,106	66,735	149,169	77,804	.92	
1978	399,390	196,376	41,360	85,043	44,314	.54	
1977	282,549	143,979	27,921	63,146	31,716	.40	

Management's Discussion and Analysis of the Financial Summary

OVERVIEW

Intel's large operating loss for 1986 is the result of continuing weakness in the semiconductor marketplace, restructuring actions taken by management to improve manufacturing efficiency, and continued high investments in strategic programs. Although unit demand improved over 1985, continued industry overcapacity resulted in pressure on selling prices and a decline in revenue from the previous year. In response to these conditions, manufacturing plants were closed and several others downsized, worldwide employment was reduced by 15% from 1985 levels and a decision was made to sell the Company's bubble memory business. These actions resulted in a \$60 million charge to operations and accounted for about one third of the year's operating loss.

RESULTS OF OPERATIONS

1986 revenues of \$1.3 billion were 7% below 1985's \$1.4 billion level and 22% below 1984's record \$1.6 billion. A recovery from the severe semiconductor industry downturn began in 1986 as revenues increased in each of the last three quarters from the immediately preceding quarter, but was not strong enough to produce yearto-year growth. The downturn began in late 1984 as a slowdown in the growth of the small-computer market allowed semiconductor supply to surpass demand and led to steep price declines in 1985. The pricing pressure was intensified by the "dumping" of certain memory devices on the market by Japanese suppliers. The price declines of 1985 moderated in 1986, and 1986 unit shipments were up from the prior year. However, the combination of industry excess capacity and a still-weak computer market continued to have a depressing effect on 1986 revenue performance as evidenced by a \$200 million decrease in sales to IBM from 1985 to 1986. The Company delivered more units to IBM in 1985 pursuant to a contract entered into in the more demand-driven 1984 period. That portion of 1985 deliveries left in inventory carried IBM through some of 1986. Purchases by IBM have recovered somewhat in late 1986.

Gross margin was 32% in 1986, up 1% from 1985 but down 14% from 1984. The continuing gross margin weakness is the result of the persistently low selling prices and the high cost of excess capacity. In a move to reduce excess production capacity and decrease operating costs, the Company closed its Barbados component assembly plant, phased out its Puerto Rico test plant and reduced the workforce at its other Puerto Rico facilities. Although unit volumes continue to grow, new equipment with greater utilization rates should enable the Company to meet projected volumes with the remaining plants and improve gross margin performance.

The 1986 operating loss of \$195 million represents the Company's second consecutive year of operating losses. The 1986 operating results were \$135 million worse than 1985 and \$445 million worse than 1984's profit of \$250 million. The 1986 operating loss increased over 1985 due mainly to the \$60 million charge for restructuring of operations, continuing weakness in the semiconductor industry, and increased spending levels. The dramatic change from 1984 reflects the industry-wide semiconductor slump which began in late 1984 and was characterized by weak demand, falling prices and industry-wide excess capacity. Marketing and administrative expenses of \$311 million in 1986 were up 9% from 1985,

back to about 1984 levels, and research and development expenses of \$228 million were 18% of revenue in 1986, up from 14% in 1985 and 11% in 1984 as investments in strategic programs (such as ASIC and iDO) continued at high levels. The Company expects investments in emerging growth areas of the industry to be important additions to the Company's portfolio and play a significant role in potential future revenue growth.

Interest and other income of \$21 million is down \$34 million from 1985, which was up \$7 million from 1984. The decline from 1985 is due to a combination of higher average borrowing balances, lower interest rates on investments and a decrease in gains on sales of investments. The increase in 1985 over 1984 was due primarily to \$15 million in gains on the sale of long-term marketable securities and income from other investments in 1985.

Despite the pretax loss for 1986, the provision for foreign income taxes exceeded the benefits provided by tax credits and resulted in a worldwide tax provision in 1986 of \$9 million, versus a benefit of \$7 million in 1985. In 1984, a year of significant profits, the effective tax rate was 34% which reflects a normal tax provision reduced by the one-time reversal of \$19 million of deferred tax on prior years' income of the Company's Domestic International Sales Corporations (DISCs). Without the DISC impact, the effective tax rate in 1984 would have been 40%.

The extraordinary gain in 1986 was a result of the repayment of approximately \$39 million of short-term and long-term debt owed to an agency of a foreign government.

FINANCIAL CONDITION

Although the semiconductor industry weakness continued throughout 1986 and the Company's results of operations have been severely impacted by the economic environment, the Company's financial condition remains strong. The Company has working capital, cash and investments sufficient to maintain its operations in the current uncertain business climate and management believes that the Company is in a solid financial position.

Working capital of \$649 million represents a decrease of \$68 million from the prior year. The decrease is due primarily to continued operational losses and capital additions, offset by depreciation and asset retirements. Capital additions to property, plant and equipment, while still substantial at \$155 million, were cut significantly from 1985's \$236 million and 1984's \$388 million levels as the slowdown has reduced the need for capital expansion. As of December 27, 1986, cash and short-term and long-term investments of \$582 million remains substantial. This balance, along with adequate open lines of credit and availability under the commercial paper program, will allow the Company to continue supporting strategic investments as it enters 1987. As of December 27, 1986, the Company's long-term debt-to-equity ratio was approximately .2 to 1, virtually unchanged from the prior year. During 1986 the Company repaid approximately \$39 million of short-term and long-term debt owed to an agency of a foreign government. In addition, the Company entered into several borrowing agreements involving Japanese Yen Promissory Notes and Japanese Government Bonds.

Corporate Directory

BOARD OF DIRECTORS

Chairman and Chief Executive Officer, Intel Corporation

Robert N. Noyce* Vice Chairman, Intel Corporation

Edward L. Gelbach Senior Vice President, **Intel Corporation**

Andrew S. Grove* President and Chief Operating Officer. Intel Corporation

D. James Guzy * President of NTX Communications Group, manufacturer of data communications equipment

Richard Hodgson† Industrialist

Sanford Kaplan†* Retired Corporate Executive

Max Palevsky* Industrialist

Arthur Rock*†* Chairman of the Executive Committee; Principal of Arthur Rock and Company, venture capital investors

Charles E. Youngt Chancellor of the University of California at Los Angeles

Gordon E. Moore*

Gordon E. Moore Chairman of the Board of **Directors and Chief Executive Officer**

> Andrew S. Grove President and Chief **Operating Officer**

CORPORATE OFFICERS

Robert N. Novce Vice Chairman of the Board of Directors

Jack C. Carsten Senior Vice President and General Manager. **ASIC Components**

Edward L. Gelbach Senior Vice President and Director, Corporate Sales

Laurence R. Hootnick Senior Vice President, Corporate Sales and Marketing

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Craig R. Barrett Vice President and General Manager, Components Technology and Manufacturing Group

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Development

Robert W. Reed Vice President and Chief Financial Officer

George H. Schneer Vice President and Director, Components Quality and Reliability Keith L. Thomson

Vice President and Assistant General Manager, Systems Group

Ronald J. Whittier Vice President and Director, Corporate Marketing

APPOINTED OFFICERS

Gary D. Adams

Vice President, Systems Group, General Manager, Oregon Systems Division

Jean-Claude M. Cornet Vice President, Microcomputer Group, General Manager, Santa Clara Microcomputer Division

Matthew A. Diethelm Vice President, Systems Group, General Manager, Arizona Systems Division

Carlene M. Ellis Vice President, Administration Group, Director, Computer Information Services

Bernard P. Giroud President, Intel Europe

James A. Grenier Vice President, Systems Group, Assistant General Manager, Arizona Systems Division

Thomas L. Hogue Vice President, Components Technology and Manufacturing Group, Director, Materials and Subcontracting

James W. Jarrett Vice President, Sales & Marketing Group, Director, **Corporate Communications**

Richard A. Sermone Vice President. Administration Group, Director, Human Resources

Edward R. Slaughter Vice President, Systems Group, General Manager, Intel **Development Operation**

H. Dean Toombs Vice President, Microcomputer Group, General Manager, Chandler Microcomputer Division

Albert Y.C. Yu Vice President, Microcomputer Group, Assistant General Manager, Microcomputer Group

Santa Clara, CA 95052-8119 ANNUAL MEETING

F. Thomas Dunlap, Jr.

Intel Corporation Mail Stop: GR1-21

P.O. Box 58119

Secretary

FORM 10-K

If you would like to receive.

without charge, a copy of the

Corporation's 'Form 10-K' which

will be filed with the Securities

to March 27, 1987 for the 1986

and Exchange Commission prior

year, please send your request to:

The Intel Annual Meeting of Shareholders will be held April 23, 1987, at the Red Lion Inn, San Jose, California.

TRANSFER AGENT AND REGISTRAR

The First National Bank of Boston Box 644 Boston, MA 02102 (Shareholders may call (617) 929-5445, with any questions regarding transfer or ownership of Intel stock.)

CERTIFIED PUBLIC ACCOUNTANTS

Arthur Young & Company San Jose, California

CORPORATE **HEADQUARTERS**

3065 Bowers Avenue Santa Clara, CA 95051-8126

Additional copies of this report are available at the following locations:

Intel Corporation Mail Stop: SC6-59 P.O. Box 58065 Santa Clara, CA 95052-8065 (408) 496-8935

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Intel Corporation S.A.R.L. 1 Rue Edison-BP 303 78054 St. Quentin en **Yvelines Cedex** France (1) 30-57-70-09

Intel Japan K.K. 5-6 Tokodai, Toyosato-machi, Tsukuba-gun, Ibaraki-ken, 300-26, Japan 81-29747-8591

- * Member of the Executive Committee
- † Member of the Finance and Audit Committee Member of the Compensation
- Committee Member of the Strategy
- Committee

